

Heat Exchanger with Interchangeable Fan Assemblies

Background of the Invention

The present invention relates to heat exchangers, and, more particularly, to coil heat exchangers having interchangeable fan assemblies.

Typical coil heat exchangers are comprised of a coil assembly of a series of elongated coil tubes with one end connected to an inlet header and the other end connected to an outlet header. Such coil assembly can be formed in an elongated, generally rectangular array housed in an elongated, generally rectangular structure. Such structure is usually formed of sheet metal with appropriate supports. Air is blown or drawn across the coil assembly by fans integrally mounted in one side of the coil assembly. It is difficult to access the coil assembly due to the presence of such integral fans. It is also difficult to change out the fans in the event of a need to replace them.

Summary of the Invention

The present invention provides a coil heat exchanger with a coil assembly of a series of elongated coil tubes mounted in an elongated, generally rectangular structure. Fans for blowing or drawing air across the coil assembly are provided as modular units that are mounted to the structure. Such fans can be readily removed in the event of a need to access the coil assembly or to replace the fans.

Brief Description of the Drawings

In the drawings,

Figure 1 is a perspective view of a coil heat exchanger in accordance with the present invention,

And Figure 2 is a perspective, exploded view of a coil heat exchanger in accordance with the present invention.

Detailed Description of Preferred Embodiments

Referring now to Figure 1, a coil heat exchanger 10 is shown as an elongated, generally rectangular structure. An elongated, generally rectangular base pan 12 is provided and is usually comprised of sheet metal. A plurality of coil circuits 14 is provided, with each coil circuit 14 usually comprised of metal tubing. Inlet header 16 and outlet header 18 are connected to opposite ends coil circuit 14 to enable a working fluid, such as water or a glycol based fluid, to be circulated through coil circuit 14.

An elongated, generally rectangular structure 20 is provided to house coil circuit 14. Structure 14 is usually comprised of sheet metal, with structural legs 13 being affixed near the bottom of structure 14 to support it.

A roof section 22 covers the top of structure 20; roof section 22 again is usually comprised of sheet metal.

Air inlet sections 21 are formed along one side of structure 20, with it being understood that similar air outlet sections are formed on the opposite side of structure 20.

Modular fan assembly 24 is a generally square structure, usually of sheet metal, that includes flush mounted fan 25. Modular fan assembly 26 is a generally square structure, usually of sheet metal, that includes an extended mounted fan 27. Modular fan assembly 28 is a generally square structure, usually of sheet metal, that includes an angle mounted fan 29. Any one of modular fan assemblies 24, 26, or 28 can be affixed to one of air inlet openings 21 on the side of structure 20. Such affixing is usually by the use of sheet metal screws through corresponding openings in an edge of modular fan assembly 24, 26, or 28 and the side of structure 20. The use of such a mounting arrangement allows the ready removal of any of modular fan assemblies 24, 26, or 28 for access to coil circuit 14 or the replacement of a fan assembly. It should be understood that the direction of fan rotation can be selected so that air inlet side 21 could alternately be the air outlet side.

Referring now to Figure 2, an exploded view of coil heat exchanger 10 is shown with the various components of structure 20. These components include base pan 12, roof 22 and modular fan assembly 26.